What is claimed is:

1. A processing method to be implemented by a computer, comprising the steps of:

obtaining three-dimensional shape data representing a three-dimensional shape model;

receiving a designation of a portion required to be corrected of the three-dimensional shape model;

displaying a surface to be joined to the designated portion;

modifying a shape of the surface according to an alteration of a parameter with regard to the shape of the surface; and

re-displaying the modified surface in response to the reception of alteration.

2. The method according to claim 1, wherein the surface is displayed on the designated portion together with the three-dimensional shape model.

3. The method according to claim 1, wherein the alteration of a parameter is executed by a manual operation of a user and the altered parameter is applied to a modification in the modifying step.

4. The method according to claim 1, wherein the alteration of a parameter is performed manually by a single operation of a user for fixing the parameter to be applied to a modification in the modifying step.

5. The method according to claim 1, wherein the shape of the surface corresponds to a shape of the designated portion with regard to any altered parameter.

6. The method according to claim 1, wherein the shape

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of the surface is determined based on a data which represents a periphery of the designated portion in the three-dimensional shape model.

7. The method according to claim 1, wherein the surface contains a plurality of points having a fixed position with reference to the X-axis direction and Y-axis direction, and

the modifying step includes modifying a position with reference to the Z-axis direction of at least one of the plurality of points based on the altered parameter.

8. The method according to claim 7, wherein the modifying step includes determining a position with reference to the Z-axis direction of at least one of the plurality of points so as to minimize a sum up to the second order differentiation among the plurality of points on the boundary condition of three-dimensional shape data of a periphery of the designated portion.

9. The method according to claim 8, wherein a first order differential coefficient and a second order differential coefficient of the second order differentiation are positive numbers and a sum of them is equal to 1, and the parameter is one of the first order differential coefficient on the second order differential coefficient.

10. A processing method of a three-dimensional shape data, comprising the steps of:

displaying a three-dimensional shape model and a surface to be joined to the three-dimensional shape model, a shape of the surface is defined by at least one parameter;

obtaining only one value of the at least one parameter; and

modifying the displayed surface based on the obtained

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value of the parameter.

11. The method according to claim 10, wherein the obtaining of a parameter value is performed manually by a manual operation of a user for fixing the parameter value, and by
5 a manual operation of a user for applying the fixed parameter value onto a modification.

12. The method according to claim 10, wherein the obtaining of a parameter value is performed manually by a manual operation of a user for fixing the parameter value, and
10 applying the fixed parameter value onto a modification is not necessary.

13. A computer program provided as a user interface of a computer system for processing a three-dimensional shape model, wherein the computer program makes the computer
15 system execute each step described in claim 1.

14. A computer program provided as a user interface of a computer system for processing a three-dimensional shape model, wherein the computer program makes the computer system execute each step described in claim 2.

20 15. A computer program provided as a user interface of a computer system for processing a three-dimensional shape model, wherein the computer program makes the computer system execute each step described in claim 3.

16. A computer program provided as a user interface of
25 a computer system for processing a three-dimensional shape model, wherein the computer program makes the computer system execute each step described in claim 4.

17. A processing system of a three-dimensional shape data, comprising:

30 a display device for displaying a three-dimensional

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shape model and a surface to be joined to the three-dimensional shape model, a shape of the surface being defined by at least one parameter;

a setting portion for obtaining only one parameter value;

5 and

a modifying portion for modifying the displayed surface based on the obtained parameter value.

18. The processing system according to claim 17, wherein the obtaining of a parameter value is performed

10 manually by a manual operation of a user for fixing the parameter value, and by a manual operation of a user for applying the fixed parameter value onto a modification.

19. The processing system according to claim 17, wherein the obtaining of a parameter value is performed

15 manually by a manual operation of a user for fixing the parameter value, and applying the fixed parameter value onto a modification is not necessary.